

TWO MORE ALIEN GRASSES NOW AT HOME IN THE CONTINENTAL U. S. A.

John R. Reeder and Charlotte G. Reeder

Herbarium (ARIZ), Herring Hall, P.O. Box 210036,
University of Arizona, Tucson, AZ 85721

ABSTRACT

Two alien grasses, formerly unknown in this country, are reported to be growing spontaneously in the continental U.S.A. *Pogonarthria squarrosa*, a native of Africa, is growing naturally in the foothills of the Huachuca Mts., Cochise County, Arizona, and *Sporobolus creber*, native to Australia, is established on a ranch in Glenn County, California.

KEY WORDS: Grasses, alien species, *Pogonarthria*, Africa, *Sporobolus*, Australia.

During the early part of the 20th century, numerous foreign grasses were introduced into the southwestern US with the object of range improvement and/or erosion control. Many of these were from Africa, and some have now become well established. Familiar examples are *Eragrostis curvula* (Schrad.) Nees, both var. *curvula* and var. *conferta* Nees; *E. echinochloidea* Stapf; *E. lehmanniana* Nees; and *E. superba* Peyr. In fact, *E. lehmanniana* is so well adapted that it is now one of the most common grasses in southern Arizona.

Authors' note: This note was originally submitted in 2000, in advance of the publication of the genera *Pogonarthria* and *Sporobolus* in vol. 25 of Flora of North America (Barkworth et al. 2003), however the manuscript was lost during the transition to new editorship of *Phytologia*. While the FNA volume has long since been issued, the historical detail regarding the advent of these species remains relevant and is complementary to those treatments.

One African grass that was grown in the experimental grass gardens, but was not known to have become naturalized, is *Pogonarthria squarrosa* (Licht.) Pilger. In the ARIZ herbarium are three specimens [as *P. falcata* (Hack.) Rendle]. The oldest was collected by [J.J.] Thornber and has the following information on the label "Seeds from South Africa. Exp. Sta. Grass Garden, Tucson. 11/12/[19]06." There are two other sheets, one with the following label data: "E.W. Hardies A-3290, City Farm, Tucson, Ariz. Sep 27, 1937." It has a stamp: "Det. at U.S. Nat. Herb." The third sheet bears only the name of the plant, the collector's name (A. R. Purchase) and the date: 8/15/38. There is little doubt that the Hardies and Purchase specimens were grown from the same seed source, perhaps are part of a single clump. The oldest specimen, made some 30 years earlier, may have been grown from a different seed source.

We have found no record to indicate that any attempt was made to grow the species outside the garden, and ARIZ has no specimens other than those indicated above. Checking with colleagues at UNMR and TAES, we were informed that those herbaria have specimens of this species collected in Africa or grown in the garden, but none from plants which were growing naturally in New Mexico or Texas.

In early 1999, Patty Guertin brought us a few inflorescences of a grass which Barbara Alberti at the Coronado National Memorial had given her for help with the identification. When Patty, a volunteer worker at the Memorial, was unable to supply a name for it, she came to us for assistance. We soon realized that it was *Pogonarthria squarrosa*, a member of the Cynodonteae, and a native of eastern and southern Africa. At the time neither Ms. Alberti nor Ms. Guertin knew who had brought in the specimen, nor its source. We were very interested, because if it were growing spontaneously in Arizona, it would be a new record for the State and probably for the nation. It was not until mid-March 1999 that the information was forthcoming. It turned out that a Dr. Jay Davenport, who resides in a new housing development just south of Sierra Vista, had found the grass growing near his property and was curious as to its identity. Finally, he returned to the Memorial to inquire whether anyone had been able to name his grass.

We were supplied with the name and address of Dr. Davenport and were able to visit him at his home. He had seen only a few clumps of the grass, and had no idea as to how much might be present. He told us he was intrigued by the inflorescence, which reminded him of the double helix of the DNA molecule. He had several inflorescences in a vase by his fireplace. Even though at that time the grasses were dry and brown, and had shed their spikelets, we were able to identify a few clumps in the area, and concluded that there might be a sizable population of the *Pogonarthria* among the other grasses.

The area which includes the Davenport property is rather extensive, and apparently was formerly a ranch. The vegetation is largely grassland, which includes – along with the natives – a fair proportion of *Eragrostis lehmanniana*. For the present, at least, the houses are scattered, and much of the grassland remains. We made several visits through the summer, especially during the “monsoon season” in order to learn more about the *Pogonarthria*, and to collect herbarium specimens. It appears that it was just fortuitous that Dr. Davenport bought the particular parcel of land that he did, and that he was curious concerning this striking grass. As it turned out, his property is at the edge of the area in which most of the *Pogonarthria* is present.

We have been unable to learn when this alien grass was introduced into this area, or whether its introduction was purposeful or accidental. It is now clearly well established, and seems to be competing well with the other grasses. The area in which we observed it covers some 5 acres or more. It tends to occur in colonies of from 3 to 10 meters in extent. When it has bloomed and is ripening it is easily seen among the other grass because of its reddish-golden color. How long this species may persist here, especially under the threat of real estate development, is a matter of conjecture. For the present, at least, it is well established, and must be considered a part of the Arizona grass flora. It appears to be a new record for the US as well.

There is some indication that the *Pogonarthria* may be extending its area. We observed some scattered clumps along the roadside near the Davenport site, and this past summer Erika Geiger found several

plants along the road just west of the Air Force Aerostat site on Fort Huachuca, some distance north of the Davenport area.

Specimens Cited: USA. ARIZONA. Cochise County: Huachuca Mts. Foothills, S of Sierra Vista. Grassy area (probably former ranchland) now being developed as residential property. Small colony on and adjacent to home of J. Davenport at 1477 Loma Lane, elev. 1450 m. Well established and competing well with other grasses. 17 Aug 1999. J.R. & C.G. Reeder 9739 (ARIZ) (Fig. 1). Same general area but at this time it is evident that there are many more colonies than formerly suspected, some several meters in diameter. 2 Sep 1999. J.R. & C.G. Reeder 9768 (ARIZ, NMCR, RSA, TAES, TEX, UC, UTC). Fort Huachuca Military Reservation, along road W of Air Force Aerostat site (E border of FHMR). Small population (+ 100 individuals). 18 Aug 1999. Erika Geiger s.n. (ARIZ).

Another interesting grass which seems to be new to the USA is *Sporobolus creber* De Nardi. In early 1999, a single specimen was sent to us by A.C. Sanders (UCR) along with other grasses for our determinations or verification. This grass is native to Australia, and is a member of the *S. indicus* complex, closely related to *S. elongatus* R.Br. Although Simon and Jacobs (1999) recognize both species as distinct, Baaijens and Veldkamp (1991) treated them as varieties of *S. indicus* (L.) R.Br. In most modern treatments of *Sporobolus* in American floras, *S. creber* would key to *S. indicus*. However, *S. creber* has the following differences: the inflorescence branches are shorter than the internodes (often conspicuously so) particularly in the lower part; the anthers are 2, rather than 3; and the spikelets as well as the grains are somewhat smaller.

Although our specimen (cited below) was collected in 1995, we have information that the species persists, and is spreading. It appears to be well established on the Holzapfel ranch, at least, and must be considered a member of the California grass flora. We had hoped to obtain specimens for distribution through a fellow botanist in California during this past year, but were unsuccessful.

The label of our specimen also includes the following remark: "Has been present in small amounts (ca. 50 plants in one pasture) for several years, suddenly increased greatly and spread to other pastures.

Cattle will not eat this grass.” Simons and Jacobs (1999) do not discuss this grass vis-a-vis cattle grazing, but in a personal communication (e-mail, 4/2000) Jacobs informs us that in Australia the plant can be somewhat “weedy.” The tough fibrous nature of the old leaves retained on the plants often cause cattle to lose teeth and therefore stock tend to avoid them. He adds that in Australia the species can be readily removed by cultivation and the addition of fertilizer.

Specimen Cited: USA. CALIFORNIA. Glenn County: Sacramento Valley, Holzapfel Ranch, 4 mi S of Willows and 5 mi E on County Rd 60, just N of Sacramento Valley Wildlife Refuge, perennial, elev. ca. 30.5 m. 20 Sep 1995. Roy Holzapfel 1 (ARIZ) (Fig. 2).

ACKNOWLEDGMENTS

The assistance of Bryan Simon and Surrey Jacobs for information on the Australian *Sporobolus creber* and related taxa is much appreciated. S.A. Renvoize (K) kindly provided us with a photo of an isotype of *S. creber* and copies of authentic specimens of *S. elongatus*. We also thank Mary Barkworth and Philip Jenkins who reviewed the manuscript. Kathryn Mauz provided the photographs, and was most helpful in formatting the manuscript for publication.

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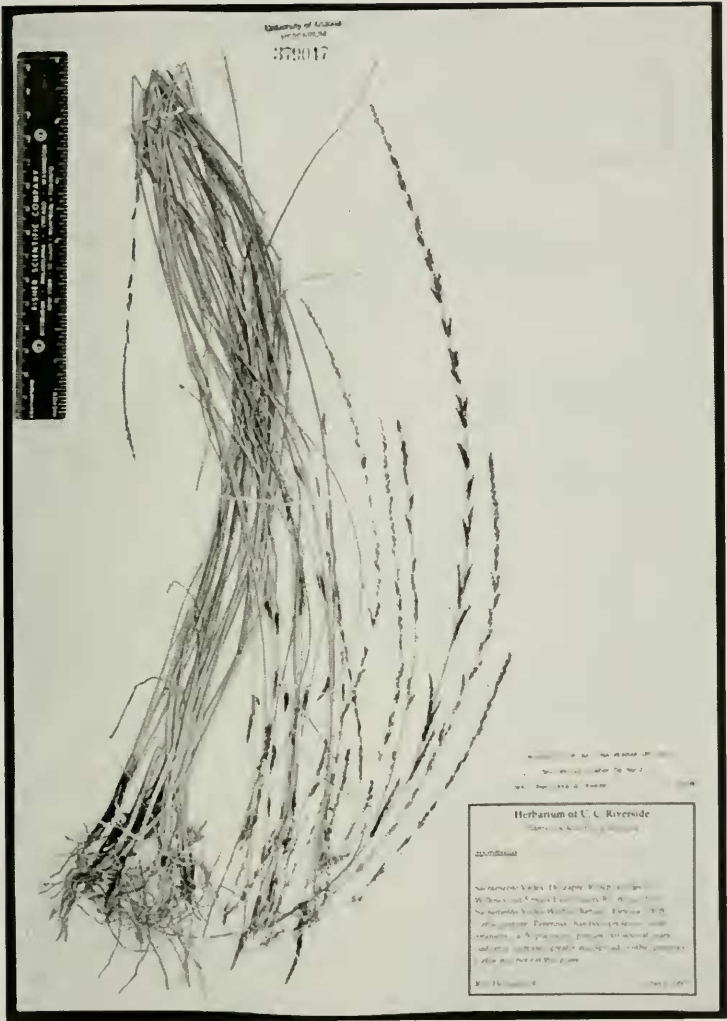


Fig. 2. *Sporobolus creber* De Nardi. Holzapfel Ranch, Sacramento Valley, California, 20 Sep 1995 (ARIZ).